IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 2, 4-7, and 14-18, and CANCEL claims 1 and 13, without prejudice or disclaimer, in accordance with the following:

1. (CANCELED)

2. (CURRENTLY AMENDED) An image forming apparatus having a developing gap detecting function, comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and the developer conveyer based on the DC current value detected by the current detecting unit~~The image forming apparatus of claim 1~~,

wherein when the electrostatic latent image formed on the area of the photosensitive medium is developed using the developer transferred from the developer conveyer, the current detecting unit detects the DC current flowing on the developer conveyor.

3. (CANCELLED)

4. (CURRENTLY AMENDED) An image forming apparatus having a developing gap detecting function, comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on

the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and the developer conveyer based on the DC current value detected by the current detecting unit~~The image forming apparatus of claim 1~~,

wherein the controller calculates a developing voltage adapted to the developer conveyer based on the obtained developing gap and supplies the developing voltage to the developer conveyer.

5. (CURRENTLY AMENDED) The image forming apparatus of claim 2~~1~~, further comprising:

a voltage detecting circuit detecting the AC voltage from the DC voltage overlapped with AC voltage; and

a constant voltage control circuit which feeds-back a value of the detected AC voltage to the power supply to maintain the value of the detected AC voltage as a target voltage value for developing,

wherein the controller controls the constant voltage control circuit to output the developing voltage adapted to the developer conveyer.

6. (CURRENTLY AMENDED) An image forming apparatus having a developing gap detecting function, comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and

the developer conveyer based on the DC current value detected by the current detecting unit~~The image forming apparatus of claim 1~~,

wherein the image forming apparatus comprises an exposure member forming the electrostatic latent image on the photosensitive medium, wherein:

based on the obtained developing voltage, the controller controls image forming conditions including a charged voltage for charging the photosensitive medium and a magnitude of light and a scanning time of the exposure member forming the electrostatic latent image on the photosensitive medium using the light.

7. (CURRENTLY AMENDED) An image forming apparatus having a developing gap detecting function, comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and the developer conveyer based on the DC current value detected by the current detecting unit~~The image forming apparatus of claim 1~~,

wherein, after the developing gap is obtained, the controller controls such that a toner image, which is developed on certain area of the photosensitive medium by the developing of the electrostatic latent image with the developer for the purpose of obtaining the developing gap, is transferred onto a paper sheet as fed.

8. (PREVIOUSLY PRESENTED) An image forming apparatus having a developing gap detecting function, comprising:

a photosensitive medium;

an exposure member forming an electrostatic latent image on the photosensitive medium;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image;

a power supply supplying a voltage to the photosensitive medium and the developer conveyer;

a current detecting unit detecting a current flowing from the power supply to the developer conveyer when the voltage of the power supply is outputted to develop the electrostatic latent image using the developer; and

a controller controlling one of a peak-to-peak, a duty ratio, a frequency, and a DC overlapped value of an AC voltage component of the power source to control image forming conditions of the developing device, and adjusting the voltage to charge the photosensitive medium, strength of light and a scanning time of the exposure member forming the electrostatic latent image on the photosensitive medium using the light.

9. (PREVIOUSLY PRESENTED) An image forming apparatus having a developing gap detecting function, comprising:

a photosensitive medium;

an exposure member forming an electrostatic latent image on the photosensitive medium;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image;

a power supply supplying a voltage to the photosensitive medium and the developer conveyer;

a current detecting unit sensing a DC current flowing on the developer conveyer when a charged developer moves from the developer conveyer to the photosensitive medium; and

a controller adjusting the voltage supplied to the developing conveyer using the sensed DC current to maintain a density deviation and a line width of the visual image uniform.

10. (PREVIOUSLY PRESENTED) A developing gap detecting method in an image forming apparatus having a photosensitive medium and a developer conveyer, the method comprises:

supplying one of DC voltage and the DC voltage overlapped with AC voltage to the photosensitive medium and the developer conveyer;

detecting a value of a DC current flowing on the developer conveyer when a predetermined voltage is outputted to develop an electrostatic latent image formed on an area of the photosensitive medium using a developer transferred from the developer conveyer;

obtaining a developing gap formed between the photosensitive medium and the

developer conveyer based on the detected DC current value; and

calculating a developing voltage adapted to the developer conveyer to be supplied to the developer conveyer based on the obtained developing gap.

11. (CANCELED)

12. (PREVIOUSLY PRESENTED) A developing gap detecting method in an image forming apparatus having a photosensitive medium and a developer conveyer to form a visual image, the method comprising:

sensing a DC current flowing on the developer conveyer when a charged developer moves from the developer conveyer to the photosensitive medium; and

adjusting a charged voltage supplied to the developing roller using the sensed DC current to maintain a density deviation and a line width of the visual image uniform.

13. (CANCELED)

14. (CURRENTLY AMENDED) A developing gap detecting apparatus comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and the developer conveyer based on the DC current value detected by the current detecting unit~~The developing gap detecting apparatus of claim 13~~,

wherein when the electrostatic latent image formed on the area of the photosensitive medium is developed using the developer transferred from the developer conveyer, the current detecting unit detects the DC current flowing on the developer conveyor.

15. (CURRENTLY AMENDED) A developing gap detecting apparatus comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and the developer conveyer based on the DC current value detected by the current detecting unit~~The developing gap detecting apparatus of claim 13~~,

wherein the controller obtains a developing voltage adapted to the developer conveyer based on the obtained developing gap and supplies the developing voltage to the developer conveyer.

16. (CURRENTLY AMENDED) The developing gap detecting apparatus of claim 1~~3~~4, further comprising:

a voltage detecting circuit detecting the AC voltage from the DC voltage overlapped with AC voltage output from the power supply; and

a constant voltage control circuit which feeds-back a value of the detected AC voltage to the power supply to maintain the value of the detected AC voltage as a target voltage value for developing,

wherein the controller controls the constant voltage control circuit to output the developing voltage adapted to the developer conveyer.

17. (CURRENTLY AMENDED) A developing gap detecting apparatus comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and

the developer conveyer based on the DC current value detected by the current detecting unit~~The developing gap detecting apparatus of claim 13~~,

wherein the image forming apparatus comprises an exposure member forming the electrostatic latent image on the photosensitive medium, wherein:

based on the obtained developing voltage, the controller controls image forming conditions including a charged voltage for charging the photosensitive medium and a magnitude of light and a scanning time of the exposure member forming the electrostatic latent image on the photosensitive medium using the light.

18. (CURRENTLY AMENDED) A developing gap detecting apparatus comprising:

a photosensitive medium forming an electrostatic latent image;

a developer conveyer depositing a developer to the electrostatic latent image formed on the photosensitive medium to form a visual image while rotating the photosensitive medium opposite thereto;

a power supply supplying one of DC voltage and the DC voltage overlapped with AC voltage to the developer conveyer;

a current detecting unit detecting a value of a DC current flowing on the developer conveyer when the voltage of the power supply is outputted; and

a controller obtaining a developing gap formed between the photosensitive medium and the developer conveyer based on the DC current value detected by the current detecting unit~~The developing gap detecting apparatus of claim 13~~,

wherein, after the developing gap is obtained, the controller controls such that a toner image, which is developed on certain area of the photosensitive medium by the developing of the electrostatic latent image with the developer for the purpose of obtaining the developing gap, is transferred onto a paper sheet as fed.